

### ABSTRACT OF THE DISCLOSURE

A method of identifying nucleic acid samples comprising:  
providing a microarray including a substrate coated with a composition including  
a population of nucleic acid probe modified micro-spheres immobilized in a  
5 coating containing a gelling agent or a precursor to a gelling agent, wherein a first  
portion of the micro-spheres is submerged in the gelatin coating and a second  
portion is exposed above the gelatin coating and is substantially free of gelatin, at  
least one sub-population of the population micro-spheres containing an optical  
barcode generated from at least one colorant associated with the micro-spheres  
10 and including a nucleic acid probe sequence; contacting the array with a target  
nucleic acid sequence; and detecting the color barcode of the sub-population of  
micro-spheres due to the interaction of the probe nucleic acid sequence and the  
fluorescently/chemiluminescently labeled nucleic acid sample target nucleic acid  
sequence.